

WHAT IS CLAIMED IS:

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1. An information storage apparatus,
comprising a recording medium including:

a user region having a plurality of user
sectors, logical block addresses being assigned
10 thereto, in which user data are stored;

an alternative region having an
alternative sector, in which user data of a
posteriori defective user sector are stored; and

a preparatory region provided at the front
15 side of said user region, having a plurality of
preparatory sectors that are used when the user
sectors and the alternative sectors are relocated,
wherein

the user sectors storing user data of the
20 posteriori defective user sectors in the alternative
region and the user sectors other than the
posteriori defective user sectors in the user region
are relocated over the preparatory region and the
user region in the order of the logical block
25 addresses; and

the user data are moved to the relocated
sectors.

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2. The information storage apparatus as
claimed in claim 1, wherein the alternative region
is located contiguous to the user region.

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3. A method of relocating sectors of an information recording medium, including:

a user region having user sectors, logical block addresses being assigned thereto, in which user data are stored;

an alternative region having alternative sectors, in which user data of posteriori defective user sectors are stored; and

a preparatory region provided at the front side of said user region, having preparatory sectors that are used when the user sectors and the alternative sectors are relocated,

comprising the steps of:

(1) counting the number of the alternative sectors;

(2) assigning new logical block addresses to sectors starting with the sector of the counted number in front of the top of the user region, the posteriori defective sectors being skipped;

(3) reading user data stored in sectors of a predetermined number in the direction in which the logical block addresses increase;

(4) writing the user data read in the step (3) in the direction in which the new logical block addresses increase; and

(5) repeating the steps (3) and (4) until the user data of all alternative sectors are moved.

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4. The method as claimed in claim 3, further comprising the step of saving the user data read in the step (3) in a nonvolatile memory.

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5 5. The method as claimed in claim 3,
wherein, if a new defective sector is found while
the user data are being written, the user data of
the defective sector are stored in the alternative
region.

10 6. The method as claimed in claim 3,
wherein the predetermined number does not exceed the
number of alternative sectors.

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7. The method as claimed in claim 3,
wherein the steps are executed in one or more of a
case in which the number of alternative sectors
20 reaches a predetermined number, a case in which a
predetermined time passes after a previous
relocating processing is executed, and a case in
which a request from an upper rank apparatus is
received.

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8. The method as claimed in claim 3,
30 wherein, in initializing processing, logical block
addresses are assigned sectors other than initial
defective sectors.

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